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MAGNETORESISTIVE SENSOR WITH MAGNETOSTATIC
COUPLING OF MAGNETIC REGIONS

ABSTRACT OF THE DISCLOSURE

5 A magnetic field sensor is described incorporating a plurality
of magnetic stripes spaced apart on the surface of a substrate such
that the stray magnetic fields at the ends of the magnetic stripes
are magnetostatically coupled and the magnetic stripes are
magnetized respectively in alternating directions, nonmagnetic
conductive material positioned in the spaces between the magnetic
10 stripes and electrodes for passing current crosswise through the
plurality of magnetic stripes to detect a change in resistance by
the giant magnetoresistive effect (MGR). The invention overcomes
the problem of detecting low magnetic fields since the magnetic
fields required to saturate magnetic stripes depends on the
15 magnetostatic coupling which in turn can be controlled by the
geometry and position of the magnetic stripes in the sensor.